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10/720,281

11/25/2003

Takayuki Hattori

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EXAMINER

JACKSON, MONIQUE R

ART UNIT

PAPER NUMBER

1773

| SHORTENED STATUTORY PERIOD OF RESPONSE | NOTIFICATION DATE | DELIVERY MODE |
|--|-------------------|---------------|
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3 MONTHS

03/23/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 03/23/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/720,281

Applicant(s)

HATTORI ET AL.

Examiner

Monique R. Jackson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The amendment filed 12/19/06 has been entered. Claims 1-30 are pending in the application. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

2. Claim 28 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 28 recites that the salt is blended or kneaded with a “polymer that will form a discontinuous polymer phase” and the mixture is then blended with a polymer “composing a continuous polymer phase” and a polymer “composing another discontinuous polymer phase”, however it is not clear whether the “continuous polymer phase” and “another discontinuous polymer phase” refer to phases in the molded or formed conductive member or phases in the initial mixing composition only.

Claim Rejections - 35 USC § 103

3. Claims 1-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harada for the reasons recited in the prior office action and restated below.

Harada teaches a semiconductive rubber composition, a charging member such as a roller or belt having an elastic layer formed from the rubber composition, and an electrophotographic apparatus comprising the charging member, wherein the semiconductive rubber composition has superior electrical properties and is formed by a dispersed domain structure having a polymeric continuous phase composed of an ion conductive rubber material and a polymeric dispersed phase composed of an electron conductive rubber material and conductive particles mixed

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therewith, wherein Harada teaches that the electrical resistance of the elastic layer of the charging roller is preferably 1×10^3 to $1 \times 10^9 \Omega \text{ cm}$ (Abstract; Col. 1, lines 7-65; Col. 12, lines 26-63.) Harada teaches that the electrical resistance of the composition can be easily set based on the composition of the two phases and the ratio of the two compositions wherein a polymer having a higher composition ratio tends to form the continuous phase (Col. 1, lines 8-10; Col. 4, lines 24-43; Col. 5, lines 1-14; Col. 9, lines 12-21.) Harada teaches that the continuous phase comprises an ion conductive agent added to a raw rubber A that may be a polyether rubber such as epichlorohydrine-ethyleneoxide-allylglycidylether, NBR, hydrogenated NBR, an acrylic rubber, others as recited in Col. 5, lines 27-40, and the like and combinations thereof (Col. 4, line 15-Col. 5, lines 40.) The ion conductive agent may be added to the raw rubber A in some cases so that no bleedout of the agent occurs, with example ion conductive agents including salts that read upon the instantly claimed salts comprising fluoro- and sulfonyl- groups such as lithium trifluoromethane sulfonate; and may be provided in an amount of 0.5 to 5 parts by weight with respect to 100 parts by weight of the raw rubber A (Col. 5, lines 42-61.) Harada also teaches that the raw rubber B may be EPM or EPDM with conductive particles preferentially blended therewith such that the conductive particles have a higher affinity to the raw rubber B (Col. 6, line 10-Col. 7, line 14; Col. 8, line 6-25.) Harada teaches that the composition can be producing by blending the conductive agents with the rubber component and then blending or kneading the master batch thus formed with the raw rubber A composition, wherein the resulting roller layer can be made via an extruder and then vulcanized in an oven (Col. 8, lines 30-48; Col. 9, lines 23-58; Col. 10, lines 27-41.) Harada teaches that the blending ratio of raw rubber A/raw rubber B, on a weight basis, is preferably in the range of from 95/5 to 40/60 (Col. 9, lines 34-38.) Harada

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further teaches that the composition may include a plasticizer in order to produce an elastic layer with preferably low hardness, or may include other compounding agents generally used for rubbers such as fillers, crosslinking agents, foaming agents (Col. 9, line 53-Col. 10, line 21.)

Hence, Harada generally teaches the components of the instantly claimed invention with the exception that the salt taught by Harada is present in the continuous phase rather than the discontinuous phase as instantly claimed. However, based on the teachings of Harada, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the ratio of the two polymer components to determine which was the dispersed phase versus the continuous phase, as taught by Harada, based on the desired volume resistivity for a particular end use, and though Harada does not specifically teach the instantly claimed percentages, one skilled in the art would have been motivated to utilize routine experimentation to determine the optimum amounts of the materials taught by Harada to provide the desired electrical properties. Further, one having ordinary skill in the art at the time of the invention would have been motivated to utilize any of the polymers taught by Harada, alone or as mixtures as taught by Harada, and in any combination of dispersed and continuous phases given the reasonable expectation of success, wherein considering Harada teaches that the composition may be utilized for the same type of applications as instantly claimed, it would have been obvious to one having ordinary skill in the art to utilize routine experimentation to provide charging members with similar characteristics as those claimed and known as suitable in the art. Lastly, though Harada teaches that the composition may include compounding agents generally used for rubbers, Harada does not specifically teach the use of flame retardants as instantly claimed however flame

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retardants are an obvious species of additive utilized in the art to provide desired flame retardant properties and would have been obvious at the time of filing.

Response to Arguments

4. Applicant's arguments filed 12/19/06 have been fully considered but they are not persuasive. The Applicant argues that the Examiner has failed to point out where in the single reference to Harada itself resides the teaching or suggestion to have the salt in the discontinuous phase. However, as discussed above, Harada teaches that the electrical resistance of the composition can be easily set based on the composition of the two phases and the ratio of the two compositions wherein a polymer having a higher composition ratio tends to form the continuous phase wherein Harada specifically teaches that the blending ratio of raw rubber A/raw rubber B, on a weight basis, is preferably in the range of from 95/5 to 40/60. Hence, though Harada specifically describes the invention in terms of the salt present in the rubber A composition as a continuous phase, Harada provides a suggestion of utilizing the salt-containing rubber A composition to the rubber B composition in a ratio of 40/60, wherein the rubber B composition, having the higher composition ratio, would tend to form the continuous phase as specifically taught by Harada and cited by the Examiner above. Therefore, Harada does in fact provide a suggestion of utilizing the salt-containing rubber A composition as the discontinuous phase. The Applicant further argues unexpected results and refers to Figure 6 and examples in the instant specification. However, the Examiner notes that the data provided fails to provide a clear showing of unexpected results with regards to the closest prior art, namely Harada, and hence the Examiner maintains her position that the instant invention would have been obvious over Harada.

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5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique R. Jackson whose telephone number is 571-272-1508. The examiner can normally be reached on Mondays-Thursdays, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on 571-272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Monique R. Jackson
Primary Examiner
Technology Center 1700
March 19, 2007